

Solid Waste Management

Chile generates 1.81 billion tons of solid waste every year and only 40% is managed. 99% of the total solid waste output comes from the mining sector.

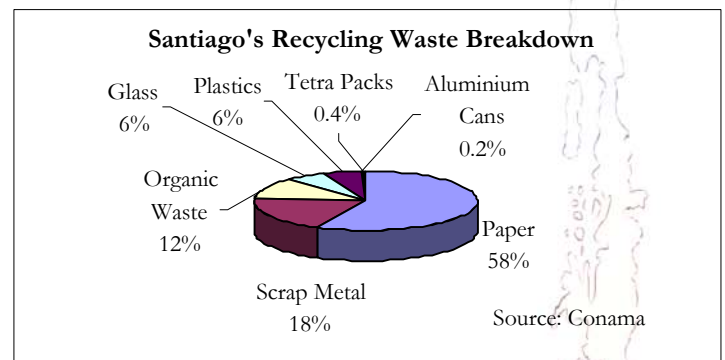
Market Overview

- The Metropolitan Environmental and Health Service (SESMA) estimates that the Santiago Metropolitan Region (MR) generates approximately seven million tons of waste per year, 50% of which is residential waste. In 2004 there were 6 million tons of residential solid waste disposed in Chile, equivalent to just over 2.2 lbs per person per day.
- CONAMA estimates that by 2010 about 2.5 million tons of solid waste will be generated in the RM per year.
- 60% of municipal solid waste (MSW) is deposited in environmentally controlled sanitary landfills of which 95.4% are located in the MR.
- MSW collection is becoming increasingly privatized. CONAMA estimates that 80% of the municipalities with 50,000 or more inhabitants have concessioned the collection and final disposal services.
- The only industry guide is the "Manual for Management of Industrial Solid Wastes" released in 1996.
- There are four residential waste sanitary dumps operating in the MR: Loma Los Colorados (Til Til), Santa Marta (Lonquén), Santiago Poniente (Maipú) and Popeta sanitary dump, controlled by the Melipilla municipality.
- All of the municipalities in the RM produce an average of 200,000 tons of MSW per month of which 9% was recycled in 2004; 10% is expected to be recycled in 2005 and 20% by 2010
- Chilean production of specialty equipment and technologies used in the treatment of solid waste is practically nonexistent. Some containers used for hospital waste handling are manufactured in Chile.
- Law 19.300 has governed the waste sector since 1994. Other regulations of the disposal of industrial solid waste began in 1997 under the "Fixed Source Emissions Control Program" (PROCEFF) of SESMA.
- Supreme Decree N° 148 stipulates regulations for the design, building and operation of sanitary landfills and defines hazardous waste. The law devoted to hazardous waste is expected to pass by the end of 2005.
- Aerobic process technology is currently used to process agro industrial waste into compost.
- SESMA claims that 70% of hospital waste is properly handled. However, this sector is not properly regulated and SESMA recommends the use of incinerators.

U.S. Position

The main U.S. solid waste management equipment and service providers identified in the Chilean Market are:

- Bravo Enery Trading N.A. (parent company of Bravo Energy Chile S.A.)
- Freightliner, Heil, Packmore and Wayne dominate the residential waste collection vehicle market. In some cases only the rear-loading mechanisms are imported while the chassis (Ford and Mercedes Benz) are imported from Mexico and Brazil.

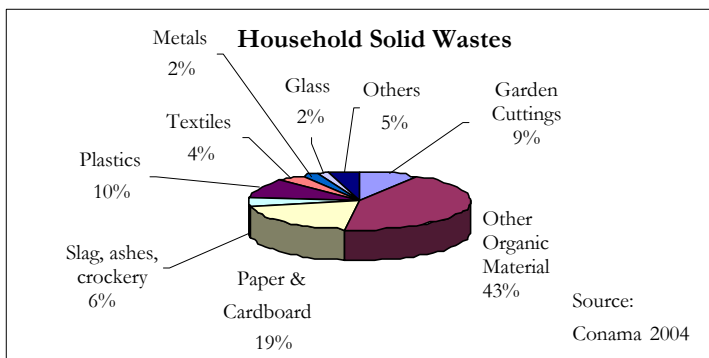


Solid Waste generated in Chile annually

Sector	Tons
Mining	1.8 billion
Residential	6 million
Construction	3.5 million
Industrial	2.5 million
Hospital*	29,000
Total	1.81 billion

Source: Conama 2004

Hazardous Hospital Solid Waste: 4,800 tons/year. (Procesan)



Competitors

- Hidronor Chile S.A.: subsidiary of Machiels Group (Belgium). The company provides a solid-waste-disposal service for hazardous and non residential waste, and treats polluted water. 43% share of the solid disposal waste market.
- Bravo Energy Chile S.A.: subsidiary of Bravo Energy Trading NA (USA). 30% of the market, including industrial, hazardous and mining wastes.
- KDM: owned by Spanish group Dragados' Urbaser.: Disposes all of Codelco's - Chile's national mining company, - waste at Codelco's El Teniente mine in Region VI. KDM also provides landfill collection services
- Arcadis Geotécnica (Chilean-Dutch) is the largest firm that offers consulting and engineering services
- Procesan and Resiter (Chilean) are the two main companies that manage the disposal of medical waste from public hospitals.
- Others: Hornos de Cemento collects hazardous and non residential waste. Coinca and Hera are two important companies in the landfill waste sector. In addition, Pullihue Ltda is one of the most important in the Agro Industrial area.

Principal Sub Sectors

- Industrial and Mining Waste
- Hazardous Waste
- Medical Waste
- Residential Waste

Commercial Opportunities

- Domestic or Municipal Solid Waste
 - Recollection, transport and building landfills represent a competitive segment especially in the Regions (not Santiago).
 - Given the penetration of Chile in new and more environmentally demanding markets, the recycling of domestic solid waste has become a growing business.
 - The Municipalities are in charge of calling for bids for solid waste projects. <http://www.munitel.cl/Default.asp>
- Industrial Hazardous Solid Waste
 - Plastic/rubber liners for disposal sites
 - Hazardous/hermetic storage containers, drums
 - Recollection and disposal of construction and mining waste
- Hospital Waste
 - Container compressor systems or other financially viable systems
 - Safe waste-handling implements
 - Auto clave machines (vapor sterilization HS 8419.20.00) and related services
- Consulting and Engineering
 - According to local firms, Chile is an emerging market for solid-waste-treatment technologies and now is a good moment to penetrate the market.
- Electronic Waste:
 - There is no regulation in this area, with much development to come. The U.S. has some of the most developed standards in this area.
- The implementation of the FTA between Chile and the U.S. is resulting in increasing environmental standards in Chile.



Other Resources

- USDOC International Trade Specialist, Lana Lennberg: Lana.Lennberg@mail.doc.gov
- USDOC International Trade Specialist, Erica Chavez: Erica.Chavez@mail.doc.gov
- Environmental Nacional Commission for the Metropolitan Region (CONAMARM): www.conamarm.cl
- Professionals Association for the Environment (AEPA): www.aepa.cl
- CONAMA (Environmental National Commission): www.conama.cl
- Ministerio de Salud (National Health Ministry): www.minsal.cl

We hope you find this information useful. If you would like further information, please contact Isabel.Valenzuela@mail.doc.gov, the CS Santiago Environmental Specialist. Visit our website at www.buyusa.gov/chile to discover other commercial opportunities in Chile. Completed October 2005.